WHAT IS CLAIMED IS:

1. An enclosure vent adapted to vent hydrogen gas while controlling release of volatile organic compounds from an enclosure to an environment surrounding the enclosure while being resistant to corrosion from corrosive materials including chlorinated solvents, hydrochloric acid and nitric acid, the enclosure vent comprising:

a housing defining a chamber therein having a first opening adapted to communicate with said enclosure and a second opening adapted to communicate with the surrounding environment the housing being made of an alloy having resisting corrosion from said corrosive elements for at least 200 years, and

a unitary filter element disposed in said chamber between the first and second openings for venting hydrogen gas from the container, the filter element comprising a carbon-to-carbon filter for providing a hydrogen permeability greater than 10E-06 mol/S/mol fraction weight, a removal of 0.45 micron particles exceeding 99.00% at an air flow capacity less than 200 ml/min., at a pressure differential less than 1.0 inch.

2. The enclosure vent of claim 1 wherein the housing has a radially extending flange portion adapted to overlie the outer surface of the enclosure and an axially extending portion adapted to pass through the opening in the enclosure, the axially extending portion including a coupler adapted to attach the housing to the enclosure.

3. The enclosure vent of claim 2 wherein the axially extending portion of the housing includes a support arrangement within the chamber for preventing axial movement of the filter media through the second opening of the housing and wherein the enclosure vent further includes a perforated lid attached to the housing for preventing axial movement of the filter media out of the second opening of the housing while allowing the passage of hydrogen gas therethrough.

4. The enclosure vent of claim 3, wherein the axially extending portion of the housing is cylindrical.

5. The enclosure vent of claim 4, wherein the axially extending portion of the housing is cylindrical and the coupler adapted to attach the housing to the container is a helical thread.

6. The enclosure vent of claim 3, wherein the support arrangement comprises an annular shoulder having a support surface against which the filter media abuts.

7. The enclosure vent of claim 1, wherein the housing includes an axially extending threaded portion and a radially extending flange portion with the chamber including an annular shoulder therein for supporting the filter media and the flange portion supporting a lid made of the same material as the housing to cover the filter media.

8. The enclosure vent of claim 7, wherein the flange portion of the housing has a relieved portion around the chamber enclosed by a radially facing axially extending wall that defines a shelf of a selected shape and wherein the lid has a shape complementing the shape of the shelf for having a press fit within the wall to retain the lid in abutment with the shelf to retain the filter media within the chamber.

9. The enclosure vent of claim 8 further including a gasket disposed adjacent the flange portion adapted to seal between the flange portion and the enclosure.

10. The enclosure vent of claim 8 wherein the enclosure has a stainless steel wall and wherein the flange portion is fixed to the wall with a peripheral weld.

11. The enclosure vent of claim 9 wherein the enclosure is a stainless steel container with a stainless steel lid and wherein the enclosure vent is welded to the lid.

12. The enclosure vent of claim 1 wherein the alloy has an average corrosion rate no greater than 2 mils per year when immersed in hydrochloric acid at a concentration of 2.0 to 2.5% by weight and a temperature of 90°; an average corrosion no greater than 2 mil per year when immersed in a solution of nitric acid and 15.8% hydrochloric acid at a concentration of 8.8% by weight and a temperature of 52°C.

13. The enclosure vent of claim 12 wherein the average corrosion rate for hydrochloric acid is less than 1 mil per year; the average corrosion rate for nitric acid is less than 1 mil per year, and the average corrosion rate for nitric acid plus 15.8% hydrochloric acid is no greater than 4 mils per year.

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